

ABSTRACT

[0072] We combine superplastic forming (SPF) with adhesive bonding (AB) to produce quality multisheet sandwich panel structures, especially those using a superplastic aluminum alloy, such as A1 2004, A1 8090, or A1 1570. We produce the parts with improved energy efficiency and at lower cost. We heat the multisheet pack having an adhesive, preferably a polyimide, between the core sheets and the face sheets to its superplastic forming range. Then, we superplastically form the pack to define adhesive bonds between the sheets in the core and between the core and the face sheets with the flowing adhesive. Finally, we cool the formed pack below the superplastic range to set the adhesive.

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